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# **Notice of Allowability**

Application No.

10/622,800

Examiner

Peter J. Vrettakos

Applicant(s)

TUROVSKIY ET AL.

Art Unit

3739

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Appeal Brief 4-27-07.
2. ☒ The allowed claim(s) is/are 1-24.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## **Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Frank Sardone on July 28, 2007.

The application has been amended as follows:

1. (Currently Amended) A cooling system for use with a microwave antenna, comprising:

a cooling jacket adapted to at least partially surround a microwave antenna and defining a fluid channel around at least a portion of the microwave antenna, the cooling jacket further defining at least a first and a second region longitudinally adjacent to and separate from one another, the first region adapted to retain cooling fluid from at least one source that is in fluid contact with a first portion of the microwave antenna, and the second region adapted to retain cooling fluid from at least one source that is in fluid contact with a second portion of the microwave antenna; and

wherein the cooling jacket is further adapted to circulate a cooling fluid through the fluid channel such that at least a portion of the microwave antenna is in direct fluid contact with the cooling fluid and wherein the microwave antenna comprises a distal tip configured to be advanced percutaneously through tissue.

2. (Original) The system of claim 1 further comprising at least one inlet lumen and at least one outlet lumen each in fluid communication with the cooling jacket for circulating the cooling fluid therethrough.

3. (Original) The system of claim 2 wherein a distal end of the inlet lumen is positioned near or at a distal end of the microwave antenna.

4. (Original) The system of claim 2 wherein a distal end of the outlet lumen is positioned proximally of the microwave antenna distal end.

5. (Original) The system of claim 2 wherein the inlet lumen is defined along an outer surface of the cooling jacket.

6. (Original) The system of claim 2 wherein the inlet lumen is defined within a wall of the cooling jacket.

7. (Original) The system of claim 1 further comprising a tip at a distal end of the cooling jacket.

8. (Original) The system of claim 7 wherein the tip is tapered.

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9. (Original) The system of claim 7 further comprising a power generator in electrical communication with the tip.

10. (Original) The system of claim 7 wherein a distal end of the microwave antenna is securable to a proximal portion of the tip.

11. (Original) The system of claim 10 wherein the tip is adapted to be in electrical communication with the distal end of the microwave antenna.

12. (Original) The system of claim 1 further comprising a handle assembly for attachment to a proximal end of the cooling jacket.

13. (Original) The system of claim 12 wherein the handle assembly defines at least one lumen therethrough which is in fluid communication with the cooling jacket.

14. (Original) The system of claim 1 further comprising a pump for circulating the cooling fluid through the cooling jacket.

15. (Original) The system of claim 1 wherein the cooling fluid comprises a liquid, gas, or combination thereof.

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16. (Original) The system of claim 15 wherein the liquid comprises water or saline.

17. (Original) The system of claim 15 wherein the gas is selected from the group consisting of nitrous oxide, nitrogen, and carbon dioxide.

18. (Original) The system of claim 1 further comprising a temperature sensor for sensing a temperature of the system.

19. (Original) The system of claim 1 further comprising an introducer which is insertable into the cooling jacket.

20. (Original) The system of claim 1 wherein the cooling jacket is configured in length to match a radiating portion of the microwave antenna.

21. (Currently Amended) The system of claim 1 wherein ~~the cooling jacket defines at least a first and a second region adjacent to and separate from one another,~~ the first region ~~[[being]]~~ is adapted to retain the cooling fluid from a first source in fluid contact with a first portion of the microwave antenna, and the second region ~~[[being]]~~ is adapted to retain cooling fluid from a second source in fluid contact with a second portion of the microwave antenna.

22. (Original) The system of claim 21 wherein the cooling fluid from the first source is maintained at a first temperature and the cooling fluid from the second source is maintained at a second temperature.

23. (Original) The system of claim 21 wherein the cooling jacket defines a plurality of additional regions adjacent to and separate from one another.

24. (Currently Amended) The system of claim 1 wherein ~~the cooling jacket defines at least a first and a second region adjacent to and separate from one another,~~ the first region ~~[[being]]~~ is adapted to retain the cooling fluid from a first source in fluid contact with a first portion of the microwave antenna, and the second region ~~[[being]]~~ is adapted to retain cooling fluid from the first source in fluid contact with a second portion of the microwave antenna.

Claims 25-78. (Cancelled)

**The following is an examiner's statement of reasons for allowance:** Claims 1-24 are pending. The prior art neglects to disclose a cooling jacket for a microwave antenna with separate longitudinally adjacent regions that pool coolant consistent with claim 1. Applicant's figure 25 depicts separate regions (654, 656) with dividers (680,682,684) in the cooling jacket (652).

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New art was located (vanHooydonk 5,902,251) depicting a cooling system for an antenna, but without dividers as now claimed by the Applicant.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J. Vrettakos whose telephone number is 571-272-4775. The examiner can normally be reached on M-F 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Linda C. Dvorak can be reached on 571-272-4764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Pete Vrettakos

July 31, 2007

/Michael Peffley/

Primary Examiner

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